

**DRAFT CRUISE INSTRUCTIONS**  
**NOAA Ship Ronald H. Brown**

*Cruise No: RB-01-03, Leg 1*  
*FOCI No: GLOBEC-1*

Itinerary:      06 MAY 2001 depart Dutch Harbor, AK  
                     12 MAY 2001 arrive Seward, AK

Participating Organizations:

NOAA – Pacific Marine Environmental Laboratory (PMEL)  
NOAA – Alaska Fisheries Science Center (AFSC)  
University of Alaska, Fairbanks (UAF)

CRUISE DESCRIPTION:

The Fisheries Oceanography Coordinated Investigations (FOCI) are an effort by NOAA and academic scientists to understand the physical and biological processes that determine recruitment variability of commercially valuable fin-fish and shellfish stocks in Alaskan waters. FOCI consists of several projects including this one funded by the North Pacific Marine Research (NPMR) Programs.

CRUISE OBJECTIVES:

The NPMR program element objective is to monitor the water properties and circulation along an oft-repeated oceanographic section in Shelikof Strait and the northern Gulf of Alaska. We will deploy 3 instrument moorings in Shelikof Strait, 3 moorings on the Gore Point line and seven moorings on the Seward line.

1.01 PERSONNEL:

1.1 Chief Scientist  
William J. Floering  
NOAA/PMEL/AFSC/RACE  
7600 Sand Point Way NE  
Seattle, WA 98115-6439  
Phone: (206) 526-6480; Fax: (206) 526-6485  
E-mail: william.floering@noaa.gov

## 1.2 Participating Scientists

Name	Title	Affil.	Sex	Nation
Wm. Floering	Chief Scientist	PMEL	M	USA
Steve Smith	Eng. Tech.	PMEL	M	USA
Wm. Parker	Field Ops	PMEL	M	USA
Nancy Kachel	CTD Data	PMEL	F	USA
TBN	CTD Data	PMEL	?	USA
Calvin Mordy	Nutrients	PMEL	M	USA
Dave Wisegarver	Nutrients	PMEL	M	USA
TBN	Mammals – OBS	AFSC ?	?	USA
TBN	Mammals – OBS	AFSC ?	?	USA
TBN	Mammals – OBS	AFSC ?	?	USA
TBN	Mammals – OBS	AFSC ?	?	USA
TBN	Mammals – OBS	AFSC ?	?	USA

## 1.3 NOAA Marine Operations Center, Pacific Contact

Larry Mordock  
NOAA/MOP (MOP1x4)  
1801 Fairview Ave. East  
Seattle, WA 98102-3767

## 1.4 Program Contacts

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Seattle, WA 98115  
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Dr. Art Kendall  
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## 1.5 Administrative Personnel:

### 1.5.1 Ship Operations

CDR Jon Rix, Chief  
Operations Division  
Marine Operations Center, Atlantic  
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### 1.5.2 Scientific Operations

LT Carrie Hadden  
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Email: hadden@pmel.noaa.gov

### 1.6 Applicability

These instructions in conjunction with the "FOCI Standard Operating Instructions for NOAA Ship Ronald H. Brown" provide complete information for this cruise. The Chief Scientist is authorized to alter the scientific portion of this cruise plan with the concurrence of the Commanding Officer, provided that the proposed change will not:

- (1) Jeopardize the safety of personnel or the ship,
- (2) Exceed the time allotted for the cruise,
- (3) Result in undue additional expense, or
- (4) Change the general intent of the cruise.

### 1.7 Operating Area

Dutch Harbor, Shelikof Strait, Northern Gulf of Alaska

## 2.0 OPERATIONS

### 2.1 Data to be collected

Measurements will be collected with shipboard sensors including the TSG, ADCP and Sea Beam, a CTD profiler with water bottles. A few satellite-tracked drifting buoys will also be launched.

#### 2.1.1 SCS will be configured to record the following

Navigation - GPS P-code and differential position, time, COG, SOG and data-quality parameters; Ring-Laser-Gyro heading; "iron gyro" heading; Seapath 200 position, time, COG, SOG, heading, pitch, roll and data-quality parameters; bottom depth

- Flow-through sampler - Thermosalinograph temperature, conductivity and salinity, and fluorometer temperature and fluorescence

- Meteorological - Relative and absolute wind speed and direction, barometric pressure, air temperature.

#### 2.1.2 ADCP

The ADCP will be configured according to the Chief Scientist's and Ned Cokelet's (PMEL/OERD/FOCI) specifications. It should receive position input from a DGPS receiver and heading from the Ring-Laser Gyro and auxiliary heading from the Seapath 200. Data will be stored on 100 MB Zip disks.

#### 2.2.3 Sea Beam

Sea Beam data may be collected on site-specific surveys as required for mooring placement. Data will be stored on a CD or Zip disk for transport to PMEL.

#### 2.2.4 CTD

CTD cast data will be collected using a PMEL 911 plus CTD as the primary system. The ship will provide a suitable backup CTD System. There will be approximately 15 CTD casts. 12 10-liter water samples for nutrients may be taken on some casts.

#### 2.2.5 AutoSal

AutoSal runs will be done to compare salinities with CTD values. Usually 1 sample will be taken per cast - alternating between deep and mixed-layer samples.

#### 2.2.7 MOA

The ship will maintain a Marine Operations Abstract (MOA) on paper giving the date, time and location of significant events such as CTD casts, buoy deployments, etc.

### 2.2 Staging Plan

Scientific equipment will be loaded aboard the vessel no later than 1000 hrs May 6, 2001 during the Dutch Harbor in-port. The majority of the equipment will be shipped to Dutch Harbor via Western Pioneer/Delta Western.

### 2.3 Cruise Plan

The cruise has two primary objectives:

1. To deploy moorings in Shelikof Strait, on the Gore Point Line and on the Seward Line. A CTD cast to 10 meters off bottom or 1500 meters maximum depth will follow each mooring deployment.

2. To deploy a number of drifter buoys along our trackline.

The ship will depart Dutch Harbor at 1200hrs May 6 for Shelikof Strait to begin deployment of 3 subsurface moorings. Next we will proceed to the Gore Point line for deployment of 3 moorings then transit to the Seward Line for an additional 8 mooring deployments. Exact mooring deployment locations will be provided in the Final Cruise Instruction. Upon completion of mooring operations the vessel will transit to Seward to disembark/embark a portion of the scientific personnel.

## 2.4 Station Operations

CTD operations will proceed 24 hours per day in the study area for ~15 casts. We request that the ship provide a Survey Technician to support these casts and ~15 AutoSal salinity determinations. The CTD may be deployed with as many as 12 10-liter bottles on its rosette and an altimeter.

### 2.4.1 Standard NPMR Station

A standard NPMR station will consist of a CTD profile to the shallower of 1500 m or ~10 m above the sea bed with the possibility of nutrient samples at selected depths.

## 2.5 Underway Operations

Several underway measurements are required. The Thermosalinograph, flow-through fluorometer, and ADCP will be used continuously. These and other SCS data should be logged throughout the cruise.

## 2.6 Small Boat Operations

There are no requirements for small boat operations during this cruise.

## 2.7 Diving Operations

There are no requirements for diving operations during this cruise.

## 2.9 De-staging Plan

It is requested that the equipment spares and empty storage/ shipping boxes remain on Ron Brown to be offloaded in Seattle June 20, 2001.

## 3.0 Facilities

### 3.1 Equipment and Capabilities Provided by Ship

- Oceanographic winch with slip rings and 3-conductor cable terminated for CTD,

- Readout for oceanographic winch,
- Sea Bird 911 plus CTD system including underwater CTD with twin temperature and conductivity sensors (plus spares),
- 12-bottle rosette, pinger, weights, deck unit,
- PC with Seasoft software and tape recorder,
- 10-liter sampling bottles for use with rosette (12 plus spares),
- AUTOSAL salinometer for CTD salinity calibration,
- Thermosalinograph,
- Flow-through fluorometer,
- Freezer space for storage of biological and chemical samples (-20 F or colder, at least 10 cu. ft.),
- Bench space (at least 10 linear feet for productivity experiment filtering),
- Salt water outlets to cool productivity deck incubator(s) in an unshaded, but protected, deck area,
- Laboratory refrigerator (at least 6 cu. ft.),
- Distilled or reverse-osmosis water source,
- Laboratory space with exhaust hood, sink, lab tables and storage space,
- Echo sounders for deep and shallow water measurements,
- RDI 150-KHz ADCP with position input from P-code or comparable GPS receiver, heading input from Ring-Laser Gyro and Seapath 200 and output to Iomega Zip drive,
- SCS (Shipboard Computer System),
- One or more networked PCs,
- Network connection for science-party-supplied Macintosh, NT and Unix computers,
- Networked black-and-white and color PostScript printers,
- Sea Beam 2112 swath bathymetric sonar system,
- Adequate deck lighting for night-time operations,
- Safety harnesses for working on deck,

### 3.2 Equipment and Capabilities Provided by Scientists

#### PMEL:

- Subsurface moorings and moored instruments
- Dragging hardware (less winch & wire)
- Networked Macintosh computer with WordPerfect, Word, Excel and eXodus,
- Networked Unix computer with EPIC and Ferret,
- Networked Windows NT computer with SeaSoft,
- IAPSO water,
- Argos-tracked drifting buoys with optical sensors,
- Miscellaneous scientific sampling and processing equipment,
- Consumables (i.e. paper, pens, pencils, etc.)
- Discrete Sample Data Base software and forms,
- Wetstar fluorometer and Benthos altimeter for CTD

## AFSC:

- Mammals Observations Equipment

### 4.1 Data Responsibilities

The Chief Scientist will receive all original data gathered by the ship for the primary project, and this data transfer will be documented on NOAA Form 61-29 "Letter Transmitting Data". The Chief Scientist in turn will furnish the ship a complete inventory listing all data gathered by the scientific party detailing types and quantities of data. The Chief Scientist will be responsible for the disposition, feedback on data quality, and archiving of data and specimens collected on board the ship for the primary project. The Chief Scientist will also be responsible for the dissemination of copies of these data to participants in the cruise, to any other requesters, and to notify NODC of measurements and samples taken at sea via a Cruise Summary Report (IOC ROSCOP, Third Edition). The ship may assist in copying data and reports insofar as facilities allow. Metadata describing data collected during FOCI and NPMR cruises must be submitted to the FOCI Ecosystem Biophysical Metadatabase within one month of completion of the cruise. On-line guidance and submission forms are available through the World Wide Web at <http://www.pmel.noaa.gov/bering/mdb/>. Alternatively, forms may be requested from the FOCI Coordinator.

#### 4.1.1 FOCI Cruise Operations Database

The Chief Scientist will ensure that all stations, deployments, etc. are entered into the FOCI Cruise Operations Database (COD).

#### 4.1.2 Transfer of Data

The Commanding Officer is responsible for all data collected for fleet ancillary projects until those data have been transferred to the project's principal investigators or their designees. Data transfers will be documented on NOAA Form 61-29. Copies of fleet ancillary project data will be provided to the Chief Scientist when requested. Reporting and sending copies of fleet ancillary project data to NESDIS (ROSCOP) is the responsibility of the program office sponsoring those projects.

### 4.2 Ship Operation Evaluation Report

Reporting requirements for the Shipboard Operations Evaluation Form, to be completed and submitted by the Chief Scientist to the Office of Marine and Aviation Operations (OMAO) within 30 days of cruise completion, will also be reviewed.

## 5.0 Additional Projects

### 5.1 Mammals Observations

Any additional work will be subordinate to the primary project and will be accomplished only with the concurrence of the Commanding Officer and the Chief Scientist(s).

#### 5.1.1.5 Summary - Ship Infrastructure Support

1. Continuous seawater supply: 20 lpm minimum, 40 lpm maximum for instruments, and 75 lpm throughput to assure short residence time of water in line and minimal heating.
2. Access to TSG and SCS data: Temperature at intake, salinity from TSG, fluorometer signal, wind speed (true and relative), wind direction (true and relative), time, latitude, longitude, and ship speed.
3. Bench space, hydrolab space, access to bow water line and drains.

Specific questions should be directed to: Robert Castle, phone 305-361-4418, castle@aoml.noaa.gov.

#### 5.2 NOAA Fleet Ancillary Projects

Ancillary tasks will be accomplished in accordance with the NOAA Fleet Standing Ancillary Instructions.

#### 6.0 Hazardous Materials

##### 6.1 Policy/Compliance

Ronald H. Brown will operate in full compliance with all NOAA hazardous materials (HAZMAT) requirements.

All hazardous materials and substances needed to carry out the objectives of the embarked science mission, including ancillary tasks, are the direct responsibility of the embarked designated Chief Scientist, whether or not that Chief Scientist is using them directly. The ship's Environmental Compliance Officer will work with the Chief Scientist to ensure that this management policy is properly executed.

##### 6.1.1 Material Safety Data Sheets

All hazardous materials require a Material Safety Data Sheet (MSDS). Copies of all MSDS sheets shall be forwarded to the ship at least two weeks prior to sailing. The Chief Scientist shall have copies of each MSDS available when the hazardous materials are loaded aboard. HAZMAT for which the MSDS is not provided will not be loaded aboard.

##### 6.1.2 Inventory

The Chief Scientist will provide the Commanding Officer with an inventory indicating the amount of each hazardous material brought onboard, and for which the Chief Scientist is



responsible. This inventory shall be updated at departure from the ship, accounting for the amount of material being removed, as well as the amount consumed in science operations and the amount being removed in the form of waste.

#### 6.1.3 HAZMAT Locker

The ship's dedicated HAZMAT Locker contains two 45-gallon capacity flame cabinets and one 22-gallon capacity flame cabinet, plus some available storage on deck. All HAZMAT, except small amounts for ready use, must be stored in the HAZMAT Locker. If science party requirements exceed ship's storage capacity, excess HAZMAT must be stored in dedicated lockers meeting OSHA/NFPA standards to be provided by the science party.

#### 6.1.4 Emergency Response

The scientific party, under supervision of the Chief Scientist, shall be prepared to respond fully to emergencies involving spills of any mission HAZMAT. This includes providing properly trained personnel for response, as well as the necessary neutralizing chemicals and clean-up materials. Ship's personnel are not first responders and will act in a support role in the event of a spill. The Chief Scientist shall provide a list of science party members that are properly trained to respond in the event of HAZMAT spills.

#### 6.1.5 Responsibility

The Chief Scientist is directly responsible for the handling, both administrative and physical, of all scientific party hazardous wastes. No liquid wastes shall be introduced into the ship's drainage system. No solid waste material shall be placed in the ship's garbage.

#### 6.1.6 Inherited Hazardous Materials

The embarking Chief Scientist will work with the departing Chief Scientist and the ship's Environmental Compliance Officer to ensure proper tracking of inherited hazardous materials.

#### 6.2 Inventory

PMEL: Lithium batteries enclosed in instrumentation.

#### 6.3 Material Safety Data Sheets (MSDS)

All MSDS sheets will be forwarded with the final cruise instructions.

## 8.0 Miscellaneous

### 8.1 Scientific Berthing

The Chief Scientist is responsible for assigning berthing for the scientific party within the spaces approved as dedicated scientific berthing. The Ops Officer will send stateroom diagrams to the Chief Scientist showing authorized berthing spaces. The Chief Scientist is responsible for returning the scientific berthing spaces in the condition in which they were received; for stripping bedding and for linen return; and for the return of any room keys which were issued.

#### 8.1.1 Responsibility for Cleanliness

The Chief Scientist is responsible for the cleanliness of the berthing and laboratory spaces and storage areas used by the science party, both during the cruise and at its conclusion prior to departing the ship.

#### 8.1.2 Implied Consent

In accordance with NC Instruction 5255.0, Controlled Substances Aboard NOAA Vessels, dated 06 August 1985, all persons boarding NOAA vessels give implied consent to conform with all safety and security policies and regulations which are administered by the Commanding Officer. All spaces and equipment on the vessel are subject to inspection or search at any time.

## 8.2 Medical Forms

The NOAA Health Services Questionnaire must be completed in advance by each participating scientist. It should reach the ship no later than 4 weeks prior to the cruise to allow time to medically clear the individual, to request more information if needed, and to prepare for special circumstances. All personnel must bring with them prescription and routine, over-the-counter medication (e.g. an aspirin a day). Supplies on board are limited, and chances to restock are few.

#### 8.2.1 Emergency Contacts

Prior to departure, the Chief Scientist must provide a listing of emergency contacts to the Executive Officer for all members of the scientific party, with the following information: scientist's name, emergency contact's name, address, relationship to scientist, telephone number and e-mail address (if available).

## 8.3 Shipboard Safety

Wearing open-toed footwear (such as sandals) outside of private berthing areas is unsafe and is not permitted. Steel-toed shoes are required to participate in any work dealing with suspended loads, including CTD deployment and recovery. All members of the scientific party are expected to be aware of these regulations and to comply with them.

## 8.4 Communications

The Chief Scientist or designated representative will have access to ship's telecommunications systems on a cost-reimbursable basis. Where possible, it is requested that direct payment (e.g. by credit card) be used as opposed to after-the-fact reimbursement. Specific information on how to contact Ronald H. Brown and all other fleet vessels can be found at <http://www.pmc.noaa.gov/phone.htm>.

### 8.4.1 E-mail Policy

Standing Order 9.21-1: In recent years the proliferation of electronic mail (e-mail) and the reduction of INMARSAT costs have permitted the sending of nominal amounts of personal e-mail when transmitted with official ship's business. The availability of e-mail services is a valuable quality of life issue aboard ship. Accordingly, a complimentary amount of personal use will be permitted for all personnel aboard.

#### 8.4.1.1 Complimentary Amount

At the current time the complimentary amount established by the Marine Operations Center, is set at \$1.50 (15 KB of data - 190 lines of uncompressed text excluding headers, addresses, etc.) per person per day. \$1.50 per day may be accumulated over a period of no more than one month such that one person will be allowed \$45 per month for e-mail transmission costs. There is no provision for payment to a person who does not utilize the complimentary amount.

#### 8.4.1.2 Costs and Billing

It should be understood that the cost of personal e-mail being transmitted from shore to an individual aboard ship will be charged against that individual's complimentary amount. A detailed billing statement will be issued periodically to any individual or Chief Scientist whose costs have exceeded his or his group's monthly entitlement. All costs in excess of an individual's or group's complimentary amount must be reimbursed. When personal use cannot be easily distinguished from official business, the amount of reimbursement will equal the total cost minus the complimentary amount. Each embarked personnel will have an e-mail account/address established in his/her name by the Lead Electronic Technician (LET) at the time of arrival. The general format is:

Firstname\_Lastname%BROWN@ccmail.rdc.noaa.gov

### 8.4.2 Satellite Communications

Standing Order 9.21-2: INMARSAT-A (voice and fax) and INMARSAT-M (voice) communications are available aboard ship and may be used for personal or business related calls so long as the caller makes arrangements to pay for the calls. Credit card calls are the preferred method of payment. INMARSAT calls can be extremely expensive and the exact cost may not be known until you receive your bill. Brevity is encouraged. See the Lead Electronic Technician

(LET) for any questions regarding the use of these phones. If you do not have a credit card and need to make an INMARSAT call, arrangements to pay by personal check may be arranged with the XO.

#### 8.4.2.1 Ship Phone Services

Standing Order 9.21-3: Routine incoming non-emergency phone calls are discouraged. Use e-mail communications for this purpose. In an emergency, embarked personnel can be contacted by phone. Phone numbers for Ronald H. Brown can be found at <http://www.pmc.noaa.gov/phone.htm#RB>.

#### 8.4.2.2 INMARSAT-A

For high speed data transmission, including FTP, and high quality voice telephone communications. Costs range from \$5-\$11 per minute for use of the service, and may be charged to credit card or otherwise reimbursed.

#### 8.4.2.3 INMARSAT MINI-M

For voice telephone communications and 2400 baud data transfer. Cost is about \$3 per minute to the US and may be charged to credit card, collect or otherwise reimbursed. Mini-M coverage is by spot beam and may not be available in all the areas the ship may be working in.

#### 8.4.2.3.1 Messages

Messages can also be left with the Marine Operations Center, Norfolk, Virginia, by calling (757) 441-6206. After hours and on weekends and holidays, an answering service will relay a message to the appropriate duty officer.

#### 8.4.3 Ship's Mail

Standing Order 9.22: Incoming letters and packages can be sent to embarked members of the ship's operating crew and scientific complement by addressing them to:

Name  
NOAA Ship RONALD H. BROWN  
Atlantic Marine Center  
439 West York Street  
Norfolk, Virginia 23510

Mail received at the Marine Center will be periodically forwarded to the ship's next port of call. When the ship is on a foreign deployment, senders are encouraged to mail letters and packages earlier to ensure delivery. Be advised that some foreign customs authorities routinely open and inspect incoming mail. Arrangements for ship's outgoing mail will be made on the morning of

departure. In foreign ports, mail must have US postage affixed as it will be boxed and overnight-expressed to the Atlantic Marine Center where it will enter the US postal system. US postage stamps are not routinely available aboard ship.

#### 8.5 Port Agent Services/Billing

Contractual agreements exist between the port agents and the commanding officer for services provided to NOAA Ship Ronald H. Brown. The costs or required reimbursements for any services arranged through the ship's agents by the scientific program, which are considered to be outside the scope of the agent/ship support agreement, will be the responsibility of that program. Where possible, it is requested that direct payment be arranged between the science party and port agent, as opposed to after-the-fact reimbursement to the ship's accounts.

#### 8.6 Wage Marine Dayworker Working Hours and Rest

Chief Scientist shall be cognizant of the reduced capability of Ronald H. Brown's operating crew to support 24-hour mission activities with a high tempo of deck operations at all hours. Wage marine employees are subject to negotiated work rules contained in the applicable collective bargaining agreement. Dayworkers' hours of duty are a continuous eight-hour period, beginning no earlier than 0600 and ending no later than 1800. It is not permissible to separate such an employee's workday into several short work periods with interspersed non-work periods. Dayworkers called out to work between the hours of 0000 and 0600 are entitled to a rest period of one hour for each such hour worked. Such rest periods begin at 0800 and will result in no dayworkers being available to support science operations until the rest period has been observed. All wage marine employees are supervised and assigned work only by the Commanding Officer or designee. The Chief Scientist and the Commanding Officer shall consult regularly to ensure that the shipboard resources available to support the embarked mission are utilized safely, efficiently and with due economy.

#### 9.0 Appendices

##### 9.1 Equipment Inventory

###### 9.1.1 PMEL:

The following inventory is preliminary, a complete equipment inventory will be presented in the Final Cruise Instructions:

- 1 Surface mooring
- 13 Subsurface moorings
- 2 EG&G Deck Units
- 5 Drifting Buoys
- 10 bottles IAPSO Standard Seawater
- Macintosh computer
- NT computer

- Sparcstation 2 Unix computer
- Networking boxes
- Zip drive
- 2 Benthos CTD altimeters
- Wetstar fluorometer
- Biospherical PAR sensor
- 10 VHS tapes
- Miscellaneous manuals
- SBE 19 Seacat/PDIM/pump
- SBE 36 deck unit

#### 9.1.2 AFSC:

The following inventory is preliminary, a complete equipment inventory will be presented in the Final Cruise Instructions:

- Mammals observations equipment

#### 9.2 Figures

Mooring diagrams will be available for review during the inport prior to sailing (May 6). If advanced copies of the mooring diagrams are required please notify the Chief Scientist.

#### 9.3 Hazardous Materials

(To be included in Final Cruise Instructions)